

FIG. 1A

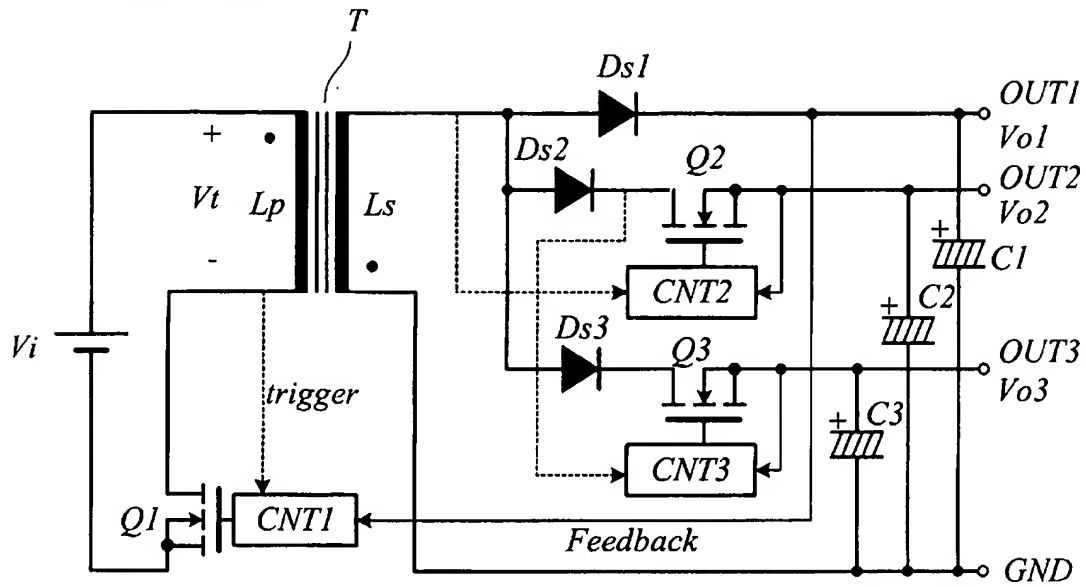


FIG. 1B

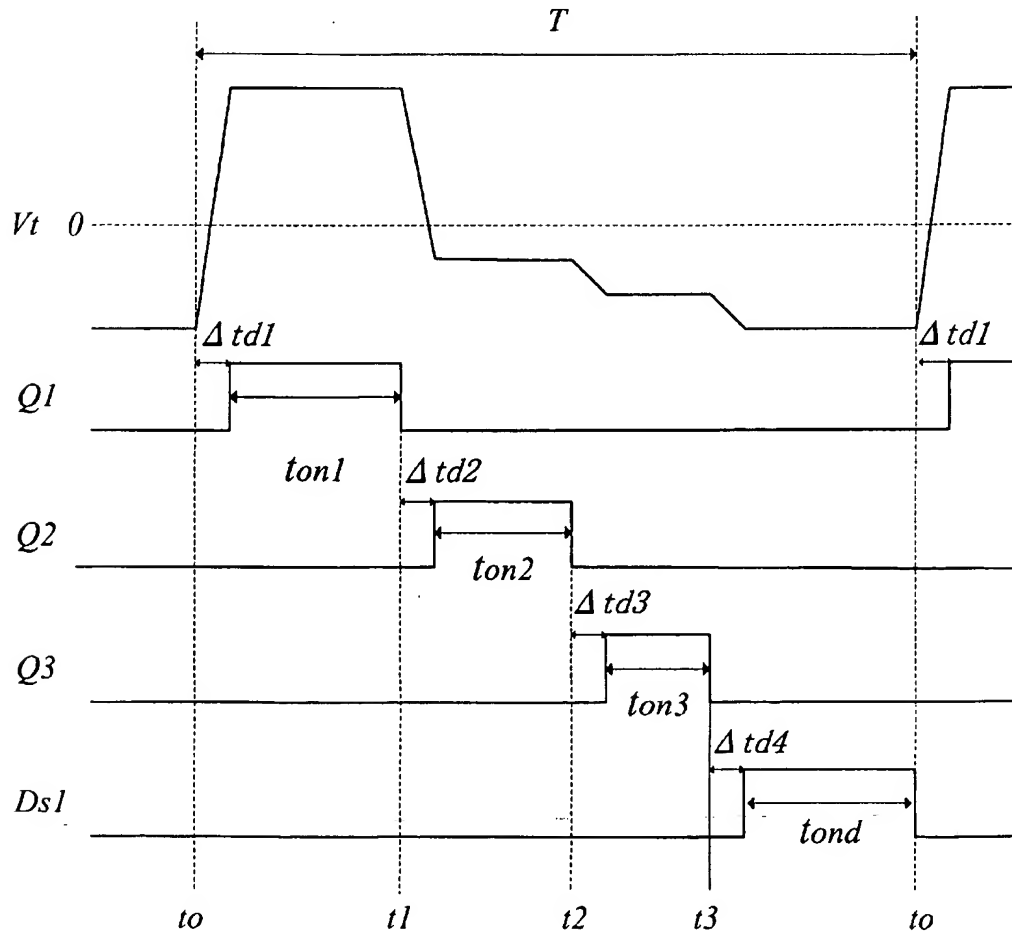


FIG. 2A

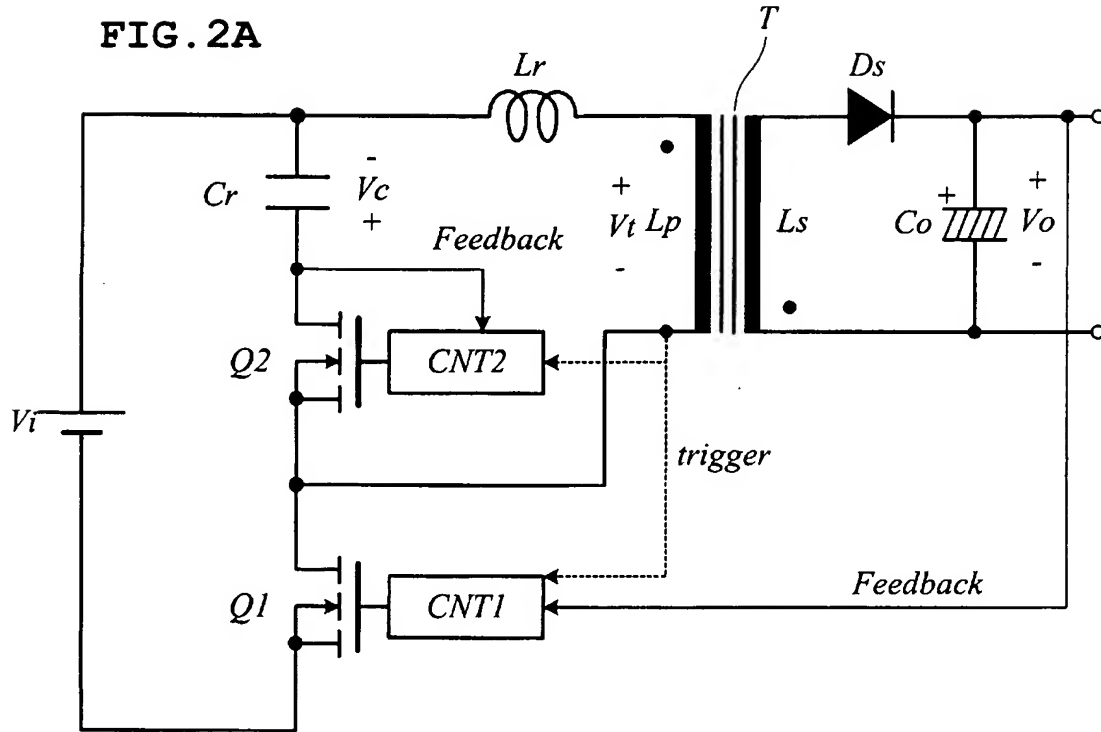
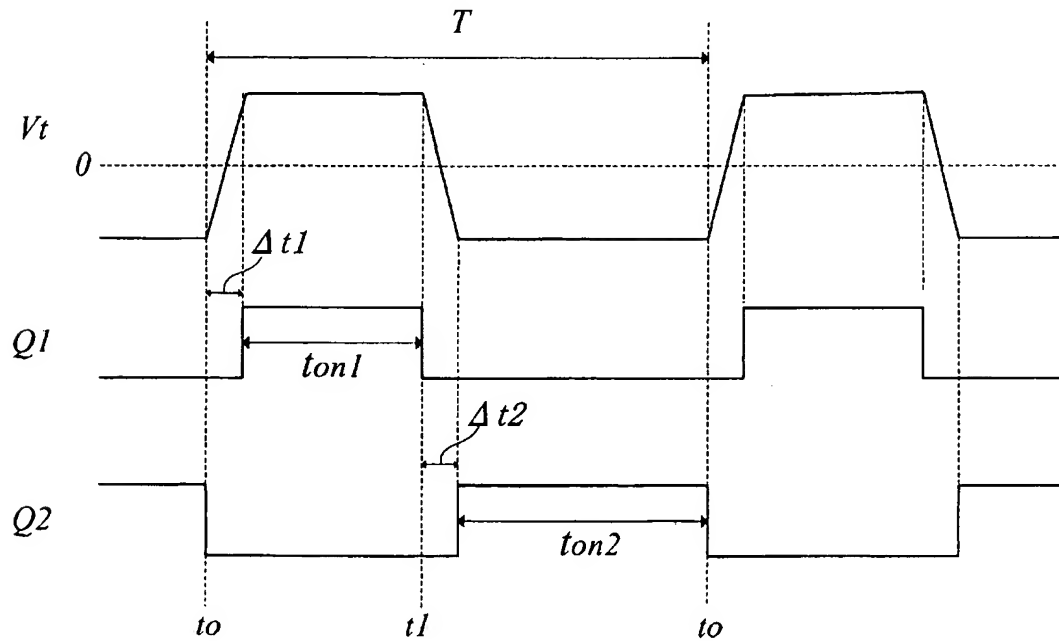


FIG. 2B



[illegible]

FIG. 4A

The circuit diagram shows a power converter. On the left, an input voltage source V_i is connected to a bridge of two MOSFETs, $Q1$ and $Q2$. Capacitors $Cr1$ and $Cr2$ are connected in series with the MOSFETs. The drain of $Q2$ is connected to a series combination of an inductor Lr and a transformer primary inductor Lp . The current through Lr is labeled it . The transformer has a primary inductor Lp and two secondary windings, $Ls1$ and $Ls2$. The primary is connected to a control block $CNT2$ and a 'trigger' signal. The secondary $Ls1$ is connected to a diode $Ds1$ and a capacitor Co . The secondary $Ls2$ is connected to a diode $Ds2$ and a 'Feedback' signal. The output voltage V_o is taken across the capacitor Co . The transformer core is represented by a vertical bar with a dot on the primary and dots on the secondaries.

The diagram illustrates the timing relationships for a two-phase inverter. It features three horizontal axes: V_t (top), it (middle), and $Q1, Q2$ (bottom). The V_t axis shows a periodic waveform with a period T . The it axis shows a periodic waveform with a period T . The $Q1, Q2$ axis shows two complementary square wave signals. The first signal, $Q1$, has a pulse width $ton1$ and a delay $\Delta t1$ from the start of the V_t pulse. The second signal, $Q2$, has a pulse width $ton2$ and a delay $\Delta t2$ from the start of the V_t pulse. The time intervals $ton1$ and $ton2$ are marked with horizontal arrows. The time intervals $\Delta t1$ and $\Delta t2$ are marked with horizontal arrows. The time intervals $ton1$ and $ton2$ are marked with horizontal arrows. The time intervals $\Delta t1$ and $\Delta t2$ are marked with horizontal arrows.

FIG. 5A

The circuit diagram shows a power converter with a feedback control system. The main power stage consists of an input voltage source V_i connected to a series combination of a capacitor C_r and an inductor L_r . The voltage across C_r is V_c . Following L_r is a transformer with primary inductance L_p and secondary inductance L_s . The transformer has a turns ratio T . The primary voltage is V_t . The secondary is connected to a diode D_s in series with an inductor L_s . The current through the diode is i_s . The output voltage is V_o across a load capacitor C_o . The control system includes two comparators, $CNT1$ and $CNT2$, and two transistors, $Q1$ and $Q2$. The output voltage V_o is fed back to $CNT1$ and $CNT2$. The output of $CNT1$ drives $Q1$, and the output of $CNT2$ drives $Q2$. The gates of $Q1$ and $Q2$ are connected to the primary of the transformer. The voltage across the primary is V_t . The current through the primary is i_p . The current through the secondary is i_s . The output voltage is V_o .

FIG. 5B

Timing diagram showing waveforms for V_t , i_s , $Q1$, and $Q2$ over time T . The diagram includes labels for t_o , t_1 , $\Delta t1$, $\Delta t2$, $ton1$, and $ton2$.